

CLAIMS

What is claimed is:

1. A micro-array support for determining binding of a first member molecule within a library of spots of tentative first member binding molecules with a second member binding molecule, the micro-array support comprising:
a support surface having surface areas; and
surface patches interspersed within the surface areas;
wherein the surface areas are materially distinct from the surface patches.
2. The micro-array support of claim 1, wherein the surface patches are hydrophilic and the surface areas are hydrophobic.
3. The micro-array support of claim 1 or 2, wherein:
the surface areas consist essentially of hydrophobic polypropylene; and
the surface patches consist essentially of polypropylene and a hydrophilic material.
4. The micro-array support of claim 3, wherein the hydrophilic material comprises polyacrylic acid.
5. The micro-array support of any one of claims 1 to 4, further comprising a library of tentative first member binding molecules arranged in spatially addressable spots on the support surface.
6. The micro-array support of any one of claims 1 to 5, further comprising a spot density of at least 25 spots per square centimeter.

7. A process for determining binding of a first member molecule within a library of tentative first member binding molecules with a second member binding molecule, the process comprising:

providing the micro-array support of any one of claims 1 to 6 with spots comprising the tentative first member binding molecules;
providing a second member binding molecule; and
detecting binding of the first member molecule with the second member binding molecule.

8. The process according to claim 7, wherein the binding is detected with an optically detectable marker.

9. The process according to claim 8, wherein the optically detectable marker comprises a fluorophore.

10. The process according to claim 9, wherein the binding is detected with an enzyme-linked-assay.

11. The process according to claim 10, wherein the enzyme-linked-assay comprises the production of a fluorescent substrate.

12. The process according to claim 11, wherein an enzyme of the enzyme-linked-assay comprises alkaline phosphatase.

13. A process for determining binding of a first member molecule within a library of tentative first member binding molecules with a second member binding molecule, the process comprising:

providing a micro-array support having a library of spots of the tentative first member binding molecules;

wherein the library of spots includes a density of at least twenty-five spots per square centimeter on a support surface of the micro-array support;

placing the second member binding molecule in contact with the library of the spots; and

detecting binding between the first member molecule and the second binding molecule with an enzyme-linked assay.

14. The process according to claim 13, wherein the enzyme-linked-assay comprises the production of a fluorescent substrate.

15. The process according to claim 14, wherein an enzyme of the enzyme-linked assay comprises alkaline phosphatase.

16. A process for determining binding of a first member molecule within a library of tentative first member binding molecules with a second member binding molecule comprising:

providing a micro-array support having a library of spots of the tentative first member binding molecules;

placing the second member binding molecule in contact with the library of spots;

detecting binding between the first member molecule and the second member binding molecule with an enzyme linked assay; and

providing for limited diffusion of an optically detectable marker molecule.

17. The process according to claim 16, wherein providing for limited diffusion comprises providing a support surface of the micro-array support with surface patches interspersed within surface areas of the support surface, wherein the surface areas are materially distinct from the surface patches.

18. The process according to claim 17, wherein the surface patches are hydrophilic and the surface areas are hydrophobic.

19. The process according to claim 17 or 18, wherein the surface areas consist essentially of hydrophobic polypropylene and the surface patches consist essentially of polypropylene and a hydrophilic material.

20. The process according to claim 19, wherein the hydrophilic material comprises polyacrylic acid.

21. The process according to any one of claims 13 to 20, wherein each spot of the library of spots are spatially addressable.

22. A synthetic molecule comprising a binding site, the synthetic molecule identified or produced by the process according to any one of claims 7 to 21.

23. A binding molecule comprising a binding site, the binding molecule identified or produced by the process according to any one of claims 7 to 21.

24. A process for identifying or obtaining a synthetic molecule having a binding site, the process comprising:
providing the micro-array support of any one of claims 1 to 6 with spots comprising the tentative first member binding molecules;
providing a second member binding molecule; and
detecting binding of the first member molecule with the second member binding molecule.

25. A process for identifying or obtaining a binding molecule capable of binding to a binding site, the process comprising:
providing the micro-array support of any one of claims 1 to 6 with spots comprising the tentative first member binding molecules;
providing a second member binding molecule; and
detecting binding of the first member molecule with the second member binding molecule.

26. A process for interfering with or affecting binding to a binding molecule or a synthetic molecule, the process comprising:
providing the synthetic molecule of claim 22, the binding molecule of claim 23 or the synthetic molecule identified or produced by the process of claim 24; and
altering the synthetic molecule of claim 22, the binding molecule of claim 23 or the synthetic molecule identified or produced by the process of claim 24, such that binding to the synthetic molecule of claim 22, the binding molecule of claim 23 or the synthetic molecule identified or produced by the process of claim 24 is interfered with or affected.